FIG. 1

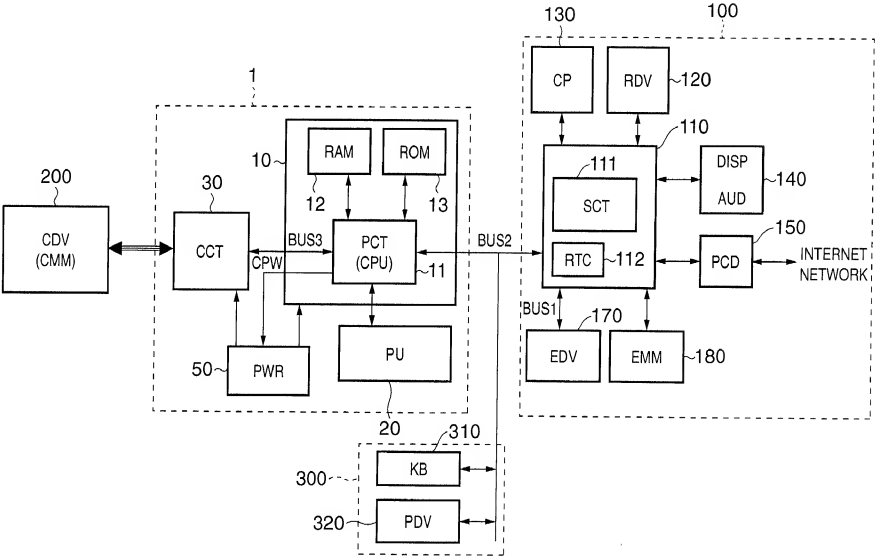
130
100
CP
RDV
120
1
110
10
RAM
ROM
111
DISP
AUD
140
200
30
SCT
12
13
150
CDV
(CMM)
CCT
BUS3
PCT
(CPU)
BUS2
RTC
112
PCD
INTERNET
NETWORK
CPW
11
BUS1
170
50
PWR
PU
EDV
EMM
180
20
310
300
KB
320
PDV

FIG. 2

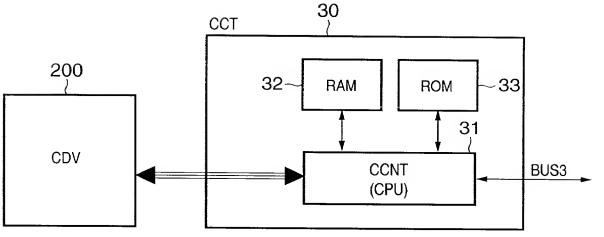

FIG. 3

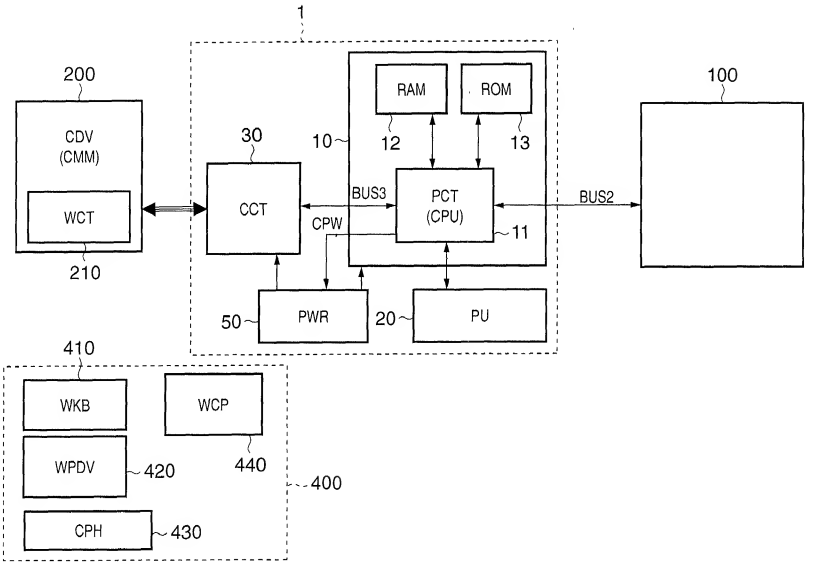
1
200
CDV
(CMM)
WCT
210
30
CCT
10
RAM
ROM
12
13
BUS3
PCT
(CPU)
11
CPW
BUS2
100
50
PWR
20
PU
410
WKB
WCP
WPDV
420
440
400
CPH
430

FIG. 4

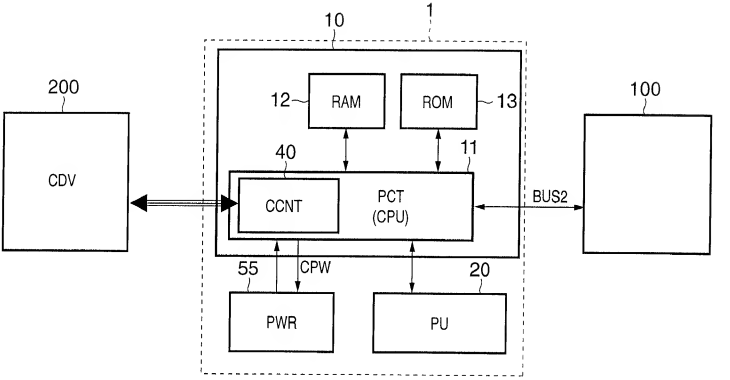
10
1
200
12
RAM
ROM
13
100
40
11
CDV
CCNT
PCT
(CPU)
BUS2
55
CPW
20
PWR
PU

FIG. 5

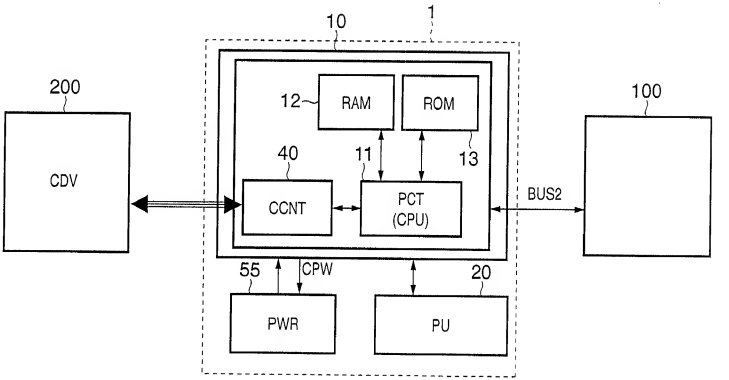
10
1
200
12
RAM
ROM
100
CDV
40
11
13
CCNT
PCT
(CPU)
BUS2
55
CPW
20
PWR
PU

FIG. 6

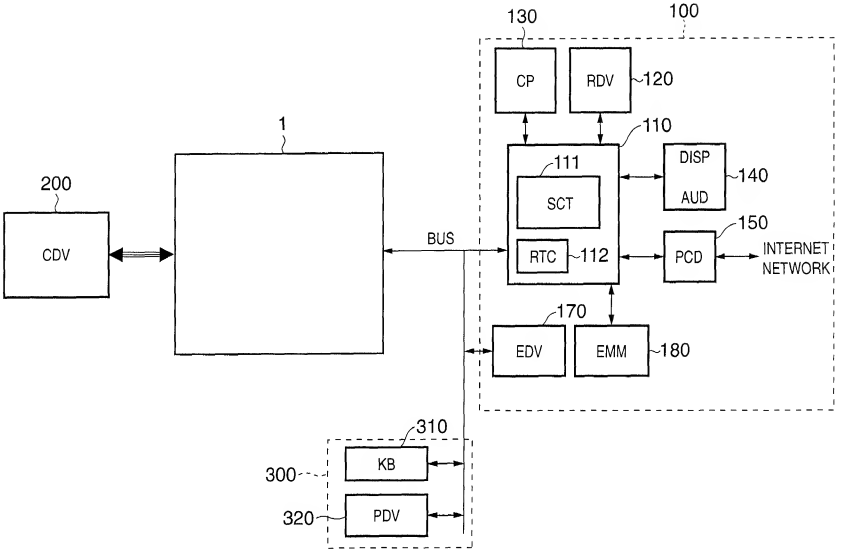
130
100
CP
RDV
120
110
1
111
DISP
140
200
SCT
AUD
150
CDV
BUS
RTC
112
PCD
INTERNET
NETWORK
170
EDV
EMM
180
310
300
KB
320
PDV

FIG. 7

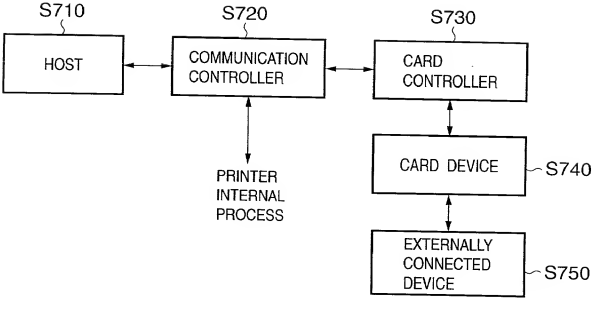
S710
S720
S730
HOST
COMMUNICATION CONTROLLER
CARD CONTROLLER
CARD DEVICE
S740
PRINTER INTERNAL PROCESS
EXTERNALLY CONNECTED DEVICE
S750

FIG. 8

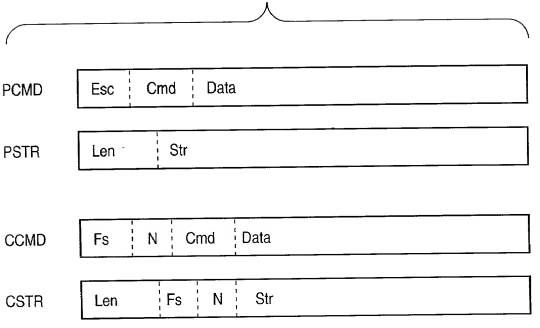
PCMD
Esc
Cmd
Data
PSTR
Len
Str
CCMD
Fs
N
Cmd
Data
CSTR
Len
Fs
N
Str

FIG. 9

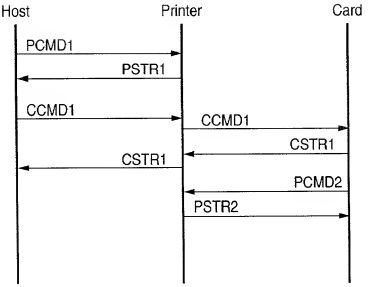
Host
Printer
Card
PCMD1
PSTR1
CCMD1
CCMD1
CSTR1
CSTR1
PCMD2
PSTR2

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FIG. 10

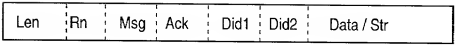

FIG. 11

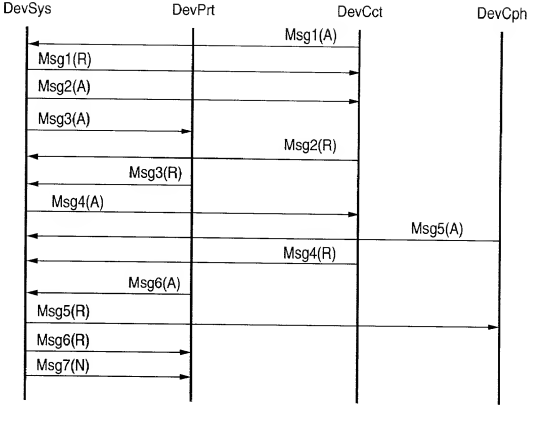
DevSys
DevPrt
DevCct
DevCph
Msg1(A)
Msg1(R)
Msg2(A)
Msg3(A)
Msg2(R)
Msg3(R)
Msg4(A)
Msg5(A)
Msg4(R)
Msg6(A)
Msg5(R)
Msg6(R)
Msg7(N)

FIG. 12

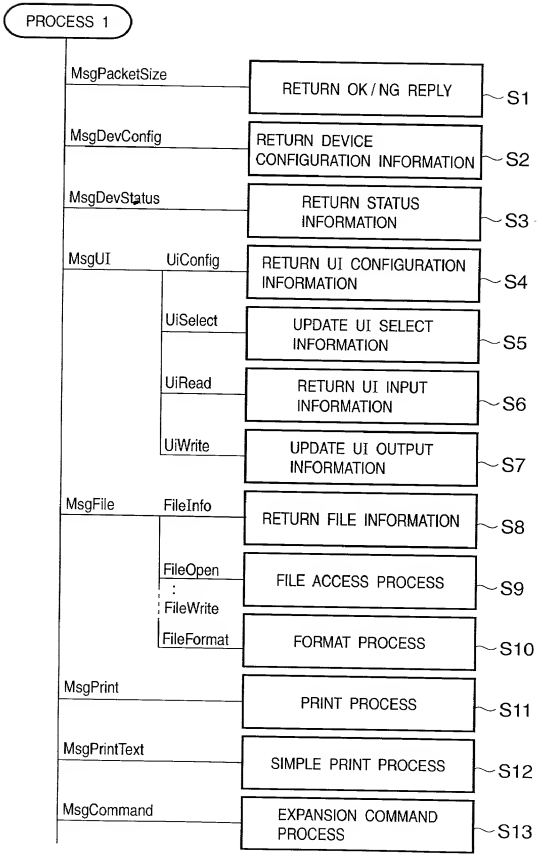
PROCESS 1
MsgPacketSize
RETURN OK/NG REPLY
S1
MsgDevConfig
RETURN DEVICE CONFIGURATION INFORMATION
S2
MsgDevStatus
RETURN STATUS INFORMATION
S3
MsgUI
UiConfig
RETURN UI CONFIGURATION INFORMATION
S4
UiSelect
UPDATE UI SELECT INFORMATION
S5
UiRead
RETURN UI INPUT INFORMATION
S6
UiWrite
UPDATE UI OUTPUT INFORMATION
S7
MsgFile
FileInfo
RETURN FILE INFORMATION
S8
FileOpen
:
FileWrite
FILE ACCESS PROCESS
S9
FileFormat
FORMAT PROCESS
S10
MsgPrint
PRINT PROCESS
S11
MsgPrintText
SIMPLE PRINT PROCESS
S12
MsgCommand
EXPANSION COMMAND PROCESS
S13

FIG. 13

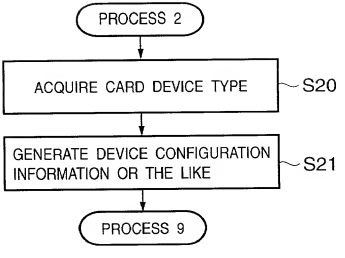
PROCESS 2
ACQUIRE CARD DEVICE TYPE
S20
GENERATE DEVICE CONFIGURATION INFORMATION OR THE LIKE
S21
PROCESS 9

FIG. 14

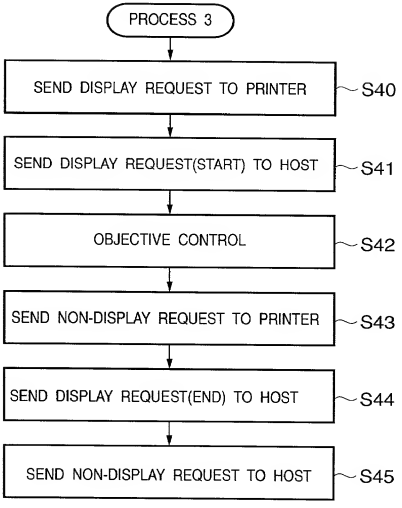
PROCESS 3
SEND DISPLAY REQUEST TO PRINTER
S40
SEND DISPLAY REQUEST(START) TO HOST
S41
OBJECTIVE CONTROL
S42
SEND NON-DISPLAY REQUEST TO PRINTER
S43
SEND DISPLAY REQUEST(END) TO HOST
S44
SEND NON-DISPLAY REQUEST TO HOST
S45

FIG. 15

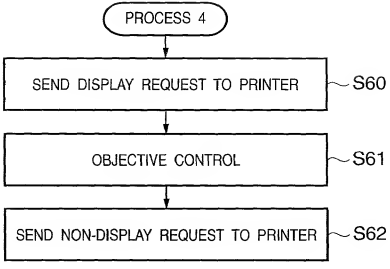
PROCESS 4
SEND DISPLAY REQUEST TO PRINTER
S60
OBJECTIVE CONTROL
S61
SEND NON-DISPLAY REQUEST TO PRINTER
S62

FIG. 16

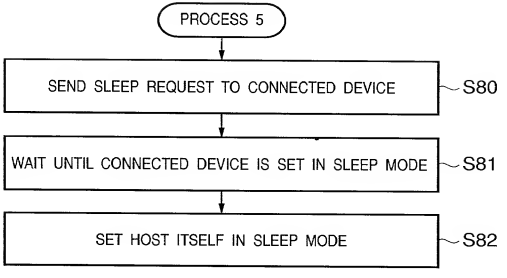
PROCESS 5
SEND SLEEP REQUEST TO CONNECTED DEVICE
S80
WAIT UNTIL CONNECTED DEVICE IS SET IN SLEEP MODE
S81
SET HOST ITSELF IN SLEEP MODE
S82

FIG. 17

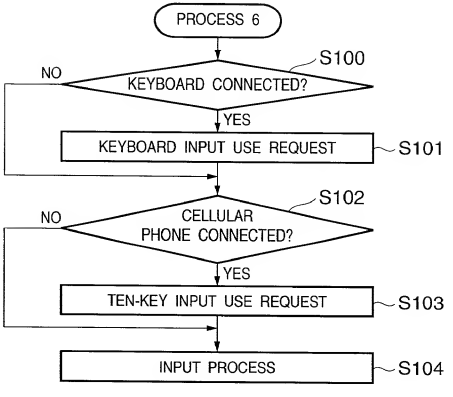
PROCESS 6
S100
NO
KEYBOARD CONNECTED?
YES
KEYBOARD INPUT USE REQUEST
S101
S102
NO
CELLULAR PHONE CONNECTED?
YES
TEN-KEY INPUT USE REQUEST
S103
INPUT PROCESS
S104

FIG. 18

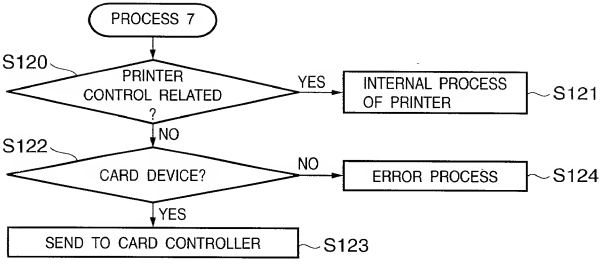
PROCESS 7
S120
PRINTER CONTROL RELATED ?
YES
INTERNAL PROCESS OF PRINTER
S121
NO
S122
CARD DEVICE?
NO
ERROR PROCESS
S124
YES
SEND TO CARD CONTROLLER
S123

FIG. 19

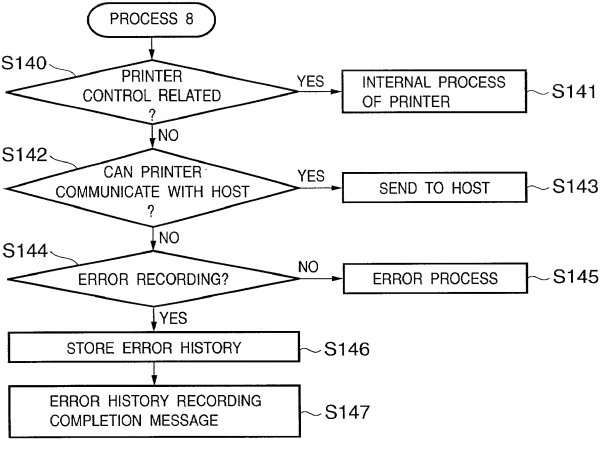
PROCESS 8
S140
PRINTER CONTROL RELATED ?
YES
INTERNAL PROCESS OF PRINTER
S141
NO
S142
CAN PRINTER COMMUNICATE WITH HOST ?
YES
SEND TO HOST
S143
NO
S144
ERROR RECORDING?
NO
ERROR PROCESS
S145
YES
STORE ERROR HISTORY
S146
ERROR HISTORY RECORDING COMPLETION MESSAGE
S147

FIG. 20

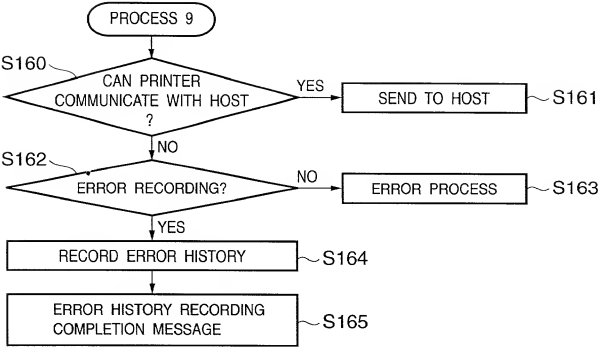
PROCESS 9
S160
CAN PRINTER COMMUNICATE WITH HOST ?
YES
SEND TO HOST
S161
NO
S162
ERROR RECORDING?
NO
ERROR PROCESS
S163
YES
RECORD ERROR HISTORY
S164
ERROR HISTORY RECORDING COMPLETION MESSAGE
S165

FIG. 21

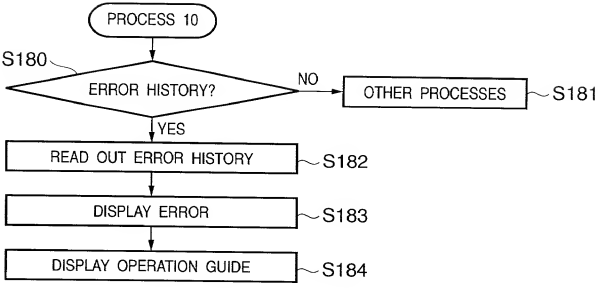

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FIG. 22

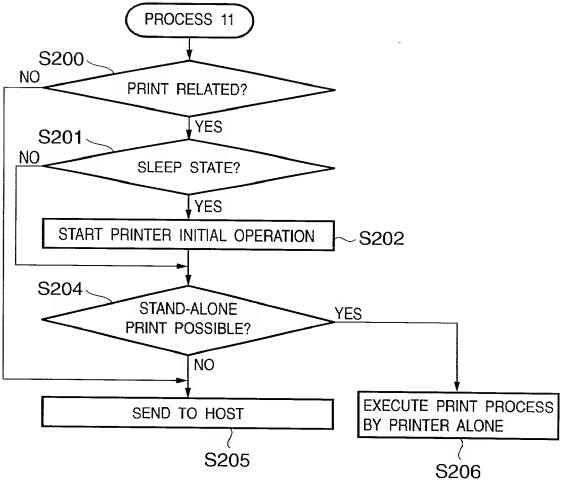
PROCESS 11
S200
NO
PRINT RELATED?
YES
S201
NO
SLEEP STATE?
YES
START PRINTER INITIAL OPERATION
S202
S204
STAND-ALONE PRINT POSSIBLE?
YES
NO
SEND TO HOST
S205
EXECUTE PRINT PROCESS BY PRINTER ALONE
S206

FIG. 23

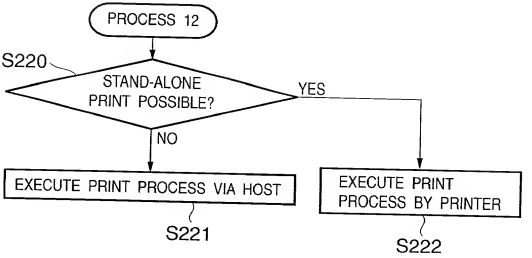
PROCESS 12
S220
STAND-ALONE PRINT POSSIBLE?
YES
NO
EXECUTE PRINT PROCESS VIA HOST
S221
EXECUTE PRINT PROCESS BY PRINTER
S222

FIG. 24

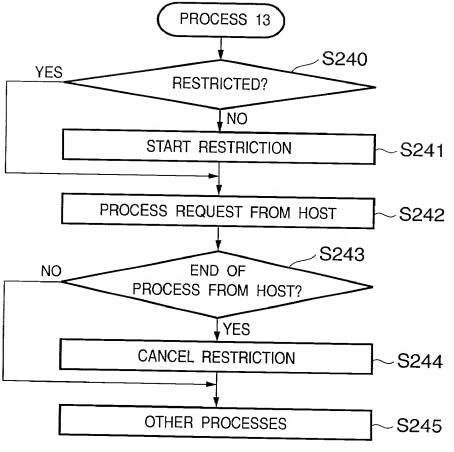
PROCESS 13
S240
YES
RESTRICTED?
NO
START RESTRICTION
S241
PROCESS REQUEST FROM HOST
S242
S243
NO
END OF
PROCESS FROM HOST?
YES
CANCEL RESTRICTION
S244
OTHER PROCESSES
S245

FIG. 25

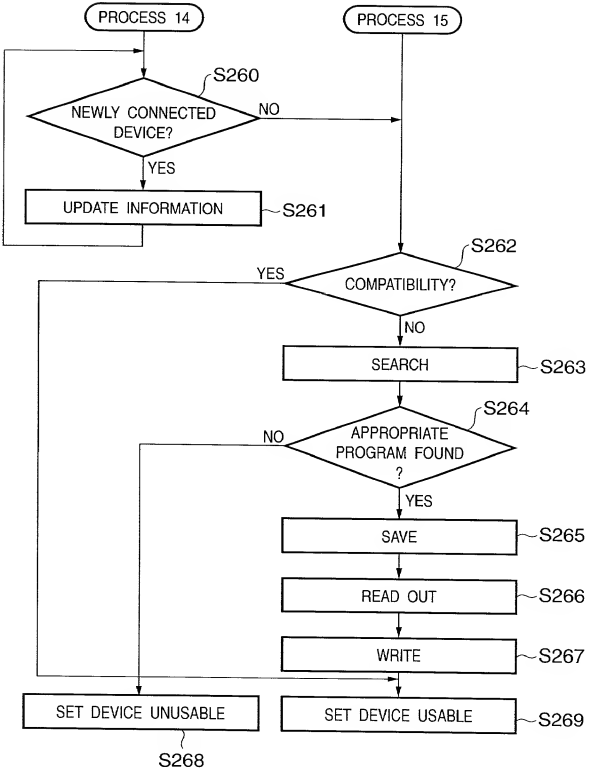

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FIG. 26

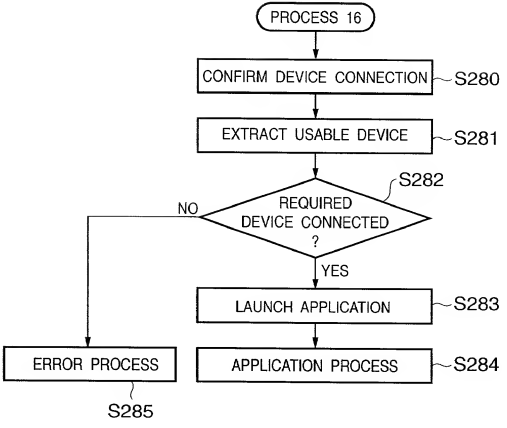
PROCESS 16
CONFIRM DEVICE CONNECTION
S280
EXTRACT USABLE DEVICE
S281
S282
REQUIRED DEVICE CONNECTED ?
NO
YES
LAUNCH APPLICATION
S283
ERROR PROCESS
APPLICATION PROCESS
S284
S285

FIG. 27

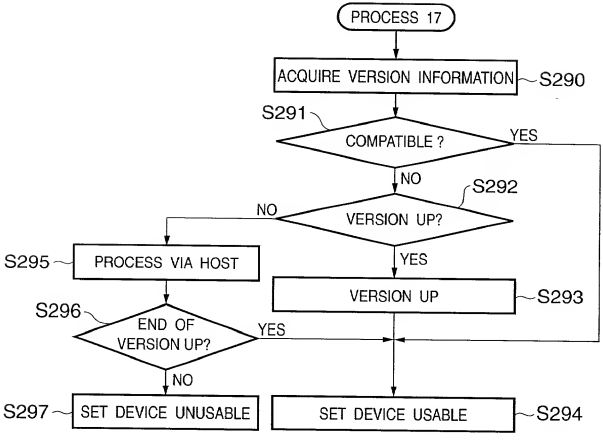
PROCESS 17
ACQUIRE VERSION INFORMATION
S290
S291
COMPATIBLE ?
YES
NO
S292
NO
VERSION UP?
YES
S295
PROCESS VIA HOST
VERSION UP
S293
S296
END OF VERSION UP?
YES
NO
S297
SET DEVICE UNUSABLE
SET DEVICE USABLE
S294

FIG. 28A

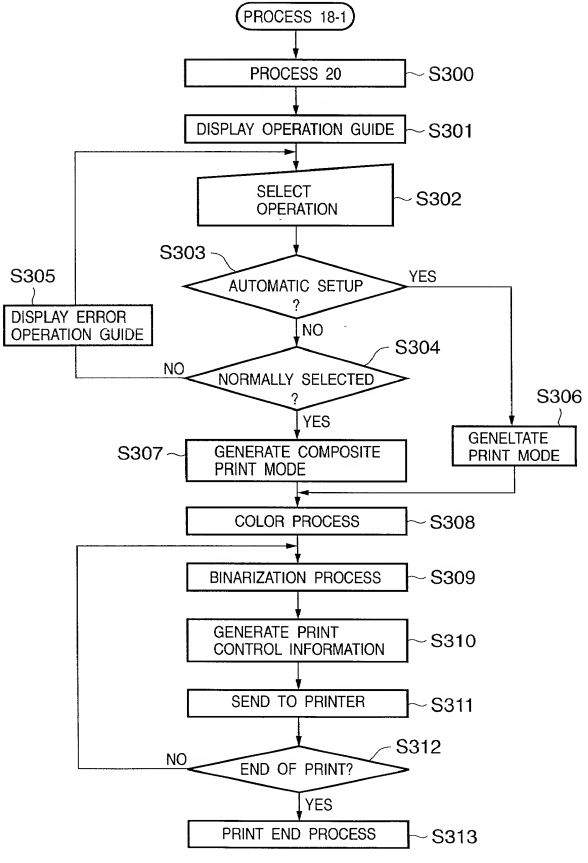
PROCESS 18-1
PROCESS 20
S300
DISPLAY OPERATION GUIDE
S301
SELECT OPERATION
S302
S303
AUTOMATIC SETUP ?
YES
NO
S305
DISPLAY ERROR OPERATION GUIDE
S304
NORMALLY SELECTED ?
NO
YES
S306
GENELTATE PRINT MODE
S307
GENERATE COMPOSITE PRINT MODE
COLOR PROCESS
S308
BINARIZATION PROCESS
S309
GENERATE PRINT CONTROL INFORMATION
S310
SEND TO PRINTER
S311
S312
END OF PRINT?
NO
YES
PRINT END PROCESS
S313

FIG. 28B

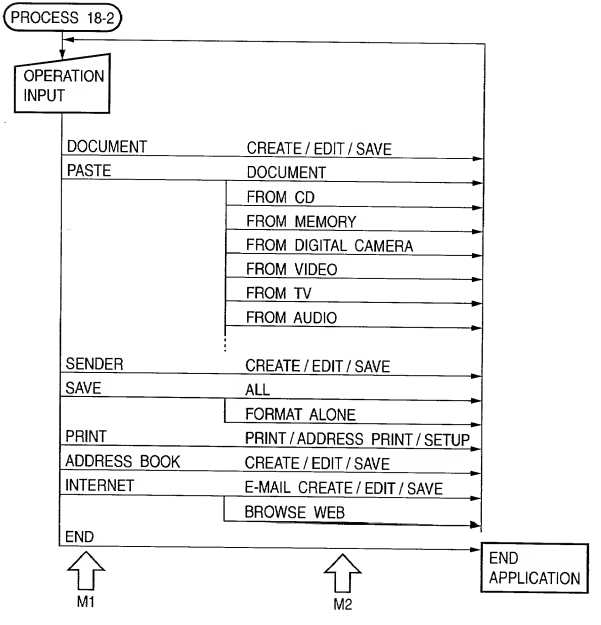
PROCESS 18-2
OPERATION INPUT
DOCUMENT
CREATE / EDIT / SAVE
PASTE
DOCUMENT
FROM CD
FROM MEMORY
FROM DIGITAL CAMERA
FROM VIDEO
FROM TV
FROM AUDIO
SENDER
CREATE / EDIT / SAVE
SAVE
ALL
FORMAT ALONE
PRINT
PRINT / ADDRESS PRINT / SETUP
ADDRESS BOOK
CREATE / EDIT / SAVE
INTERNET
E-MAIL CREATE / EDIT / SAVE
BROWSE WEB
END
END APPLICATION
M1
M2

FIG. 29

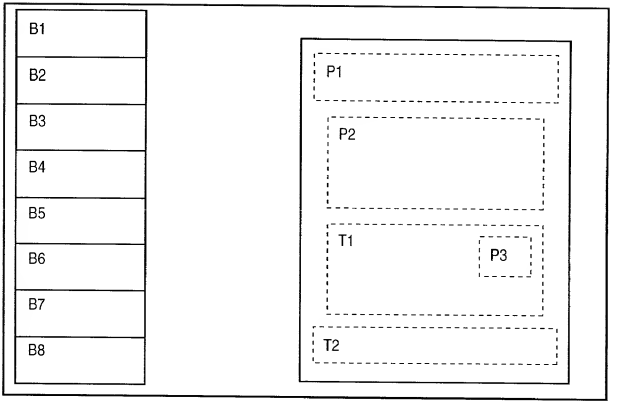

FIG. 30

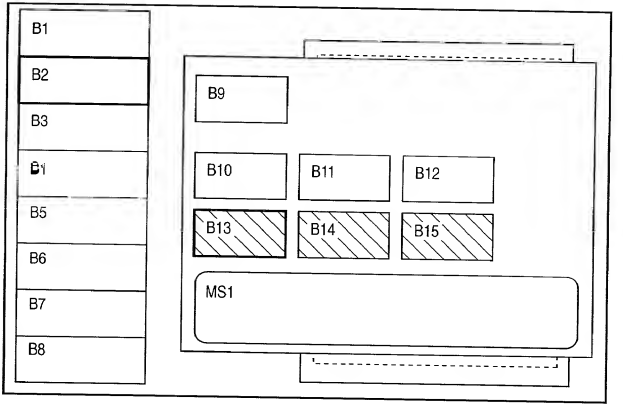

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FIG. 31

OBJECT NAME	TYPE	POSITION	ENLARGEMENT / REDUCTION	ROTATION / REVERSE	LAYER
P1	ClipArt	x1,y1	120%	0°, 0	0
P2	Jpeg	x2,y2	100%	0°, 0	0
T1	Text	x3,y3	100%	0°, 0	0
P3	Jpeg	x4,y4	25%	0°, 0	1
T2	Text	x5,y5	80%	0°, 0	0

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FIG. 32

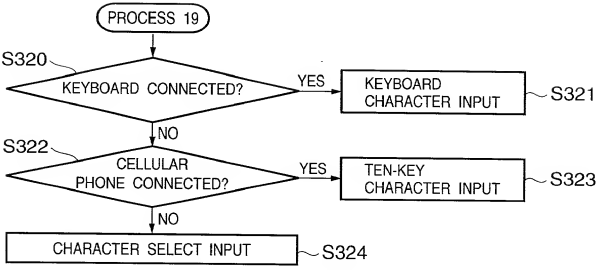

PROCESS 19
S320
KEYBOARD CONNECTED?
YES
KEYBOARD CHARACTER INPUT
S321
NO
S322
CELLULAR PHONE CONNECTED?
YES
TEN-KEY CHARACTER INPUT
S323
NO
CHARACTER SELECT INPUT
S324

FIG. 33

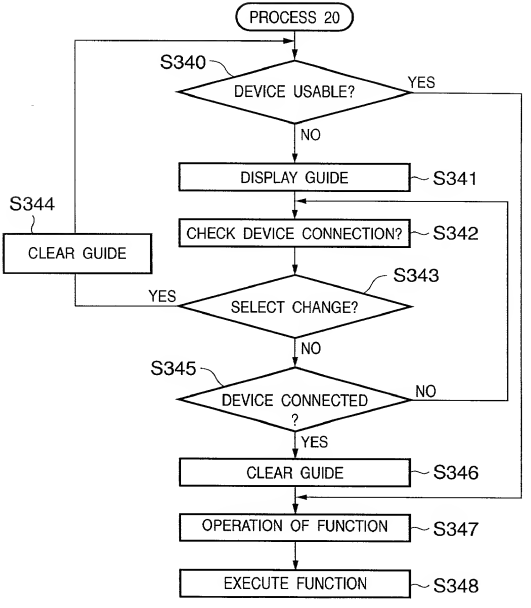

PROCESS 20
S340
DEVICE USABLE?
YES
NO
DISPLAY GUIDE
S341
S344
CLEAR GUIDE
CHECK DEVICE CONNECTION?
S342
S343
YES
SELECT CHANGE?
NO
S345
DEVICE CONNECTED ?
NO
YES
CLEAR GUIDE
S346
OPERATION OF FUNCTION
S347
EXECUTE FUNCTION
S348

FIG. 34

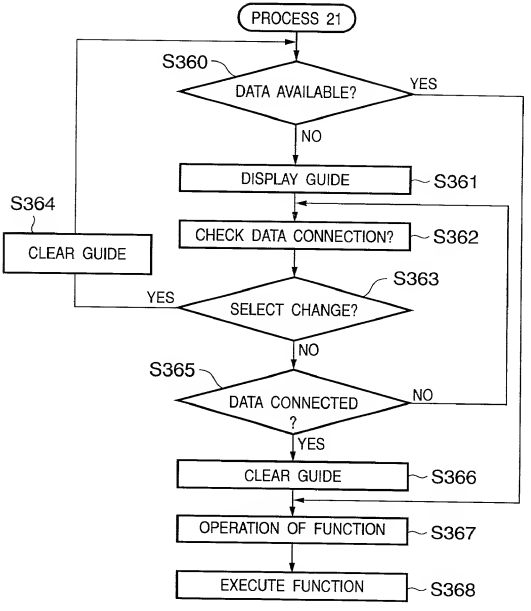

PROCESS 21
S360
DATA AVAILABLE?
YES
NO
DISPLAY GUIDE
S361
S364
CLEAR GUIDE
CHECK DATA CONNECTION?
S362
S363
YES
SELECT CHANGE?
NO
S365
DATA CONNECTED ?
NO
YES
CLEAR GUIDE
S366
OPERATION OF FUNCTION
S367
EXECUTE FUNCTION
S368

FIG. 35

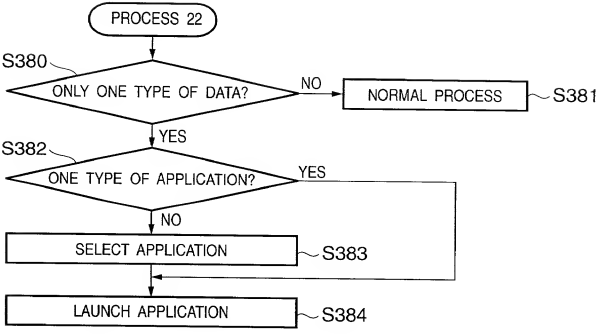

PROCESS 22
S380
ONLY ONE TYPE OF DATA?
NO
NORMAL PROCESS
S381
YES
S382
ONE TYPE OF APPLICATION?
YES
NO
SELECT APPLICATION
S383
LAUNCH APPLICATION
S384

FIG. 36

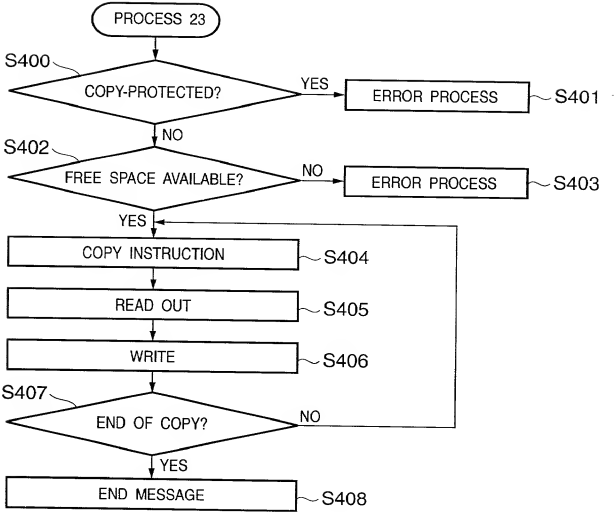

PROCESS 23
S400
COPY-PROTECTED?
YES
ERROR PROCESS
S401
NO
S402
FREE SPACE AVAILABLE?
NO
ERROR PROCESS
S403
YES
COPY INSTRUCTION
S404
READ OUT
S405
WRITE
S406
S407
END OF COPY?
NO
YES
END MESSAGE
S408

FIG. 37

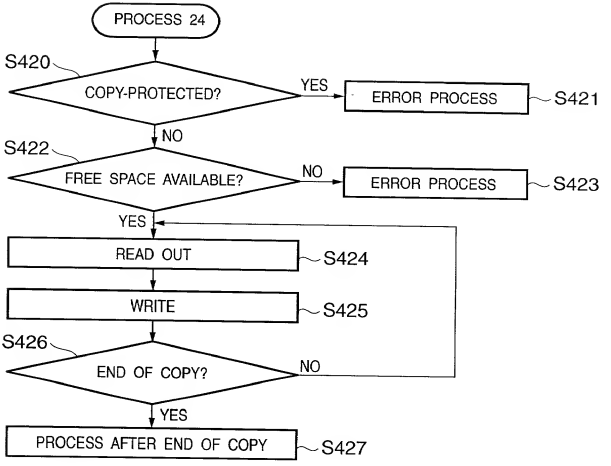

PROCESS 24
S420
COPY-PROTECTED?
YES
ERROR PROCESS
S421
NO
S422
FREE SPACE AVAILABLE?
NO
ERROR PROCESS
S423
YES
READ OUT
S424
WRITE
S425
S426
END OF COPY?
NO
YES
PROCESS AFTER END OF COPY
S427

FIG. 38

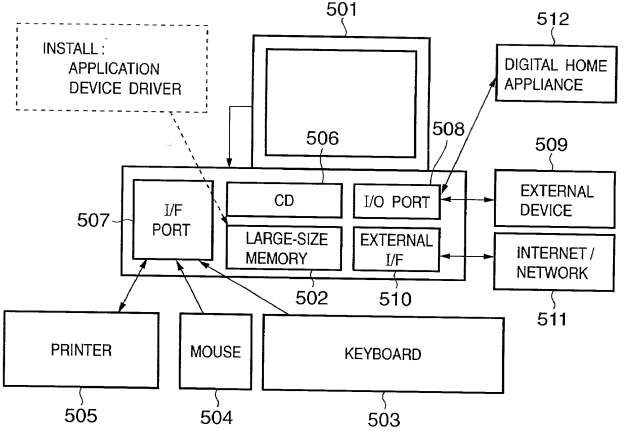

501
512
INSTALL:
APPLICATION
DEVICE DRIVER
DIGITAL HOME
APPLIANCE
506
508
509
I/F
PORT
CD
I/O PORT
EXTERNAL
DEVICE
507
LARGE-SIZE
MEMORY
EXTERNAL
I/F
INTERNET/
NETWORK
502
510
511
PRINTER
MOUSE
KEYBOARD
505
504
503

FIG. 39

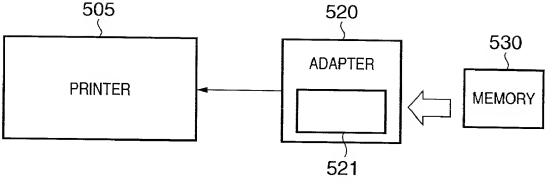
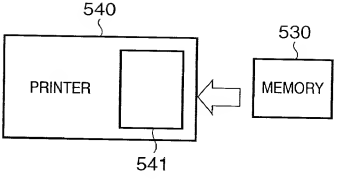


FIG. 40



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